24 March 1986

MEMORANDUM FOR: [redacted]

FROM: [redacted] STAT

SUBJECT: NPIC Message Format

The following documents IISGs history on NPIC message format change:

In late 83 - early 84 ASG requested that SAFE have a direct interface to NPIC system for data. CSPO began discussions to determine if the message traffic from NPIC would contain information desired or if we actually needed an interface. At that time during the informal discussions we heard about the new format and began working the problem. We have not been able to find any official documentation from NPIC informing us of the new format. We do have books describing it from working meetings we attended.

On the funding issue from ASG, a memo OIT-0742-85 (SAF-E223-85) dtd 26 Sept 85 contains a request for funding from ASG and does document some of the history of the requirement.

[redacted] STAT

OIT 0742-85
SAF-E223-85
26 September 1985

MEMORANDUM FOR: Chief, Analytic Support Group/DDI

VIA: Director Information Technology

FROM: Edward J. Maloney
Deputy Director for Development/OIT

SUBJECT: NPIC Message Format Change

REFERENCES:
A. HFD/DNG/OIT Memo (S) OIT-10264-85, dtd 24 June 1985, Subject: Data Base Entry Message
B. NPIC/DPG/SEID Memo (TS/TKO), dtd 24 April 85
C. Memorandum for the Record, dtd 20 May 85

1. Requirement: As a result of the referenced memorandum ASG has levied a requirement on CSPO to provide access to a new NPIC message format. OIT accepts this requirement. These format changes are due to a new collection system message traffic. This requirement impacts DATEX and SAFE. This requirement must be satisfied via electrical transmission from DATEX to SAFE and OCR beginning April 1986. These new formatted messages will replace the current OAK traffic received today.

2. Problem Definition: This new message traffic is structured in Data Base Entry Message (DBEM) formats. This new format is made up of field name/value pairs. Analysis of the DBEM specifications surfaced a problem in that certain logical records would be up to 132 characters in length. The existing software to support the message processing for SAFE is unable to handle message formats greater than 80 characters.

3. Recommended Solution: Based on the analysis of the DBEM specifications and through discussions with [redacted] of ASG, it was agreed to have DATEX split 132 character records into two 80 character records for transmission to SAFE and OCR. The SAFE and OCR software will be responsible for the reconstruction of these records to ensure that field name/values will not be split across records. 25X1

The total contractor funds required to accomplish this task is $75,000.00.

SECRET

4. DATEX Impact: DATEX has agreed to rewrite the software in the main DATEX processor to break the 132 character records into 80 character records for transmission to SAFE. Approximately one half a man year effort is required and will be accomplished with Agency staff resources.

5. [redacted] (OCR) Impact: No impact to the Message Processing System (MPS) software and a four to five week effort for modifying the Interim-SAFE software that supports OCR. This effort will be accomplished with Agency staff resources and will be performed without cost. 25X1

6. Northside Center (Delivery 1 & 2) Impact: No impact to Delivery 1 SAFE software. The software being modified in the [redacted] is the same software used here. 25X1

The impact to Delivery 2 SAFE software is broken down into two areas.

a. One half a man year at a cost of $75,000.00 to change the External Message Interface (EMI) task to reconstruct the 80 character records.

b. One man year and $150,000.00 to change the Message Resolution Processing (MRP) task to recognize the zoning requirements. This modification is part of the SAFE baseline and has been funded as part of the SAFE program.

Note: The following caveat exists for this estimate. LOGICON has not been given the zoning requirements for the new message specifications. This estimate is based on previous level of efforts required for zoning the OAK messages.

The issue of security compartment has not been addressed. This will be pursued via a DPR generated by your organization.

7. This requirement can be accommodated and the service provided if direction can be given by 1 October 1985 and if funds can be made available in early FY1986.

[redacted] 25X1

Attachments:
A. HFD/DNG/OIT Memo dtd 24 Jun 85
B. MFR dtd 20 May 85

SECRET

SUBJECT: NPIC Message Format Change

ISG/OIT [redacted] (5 Sept 85) 25X1

Distribution:

Orig - Addressee
1 - D/OIT
1 - C/ISG
1 - C/MISG
1 - C/SDD/ISG
1 - C/SES/ISG
1 - C/HFD/DNG
1 - SAFE Chrono

OIT-10264-85
24 June 1985

MEMORANDUM FOR: Chief, Systems Engineering Integration Division, DPG/NPIC/DDS&T

FROM: [redacted] 25X1
Chief, Headquarters Facilities Division, DNG/OIT

SUBJECT: Data Base Entry Message (DBEM) [redacted] 25X1

REFERENCE : A. NPIC/DPG/SEID Memo (TS/TKO), dtd 24 April 85
B. Memorandum for the Record, dtd 20 May 85

1. Members of my staff have discussed and concluded that DATEX will be able to handle the Data Base Entry Message (DBEM) traffic volumes from NPIC to DIA/AIRES and NSA via DATEX, as described in Reference A. However, DATEX cannot transfer the DBEMs with the 132 character record size to SAFE. [redacted] 25X1

2. Data Exchange Switch is a ten-year-old system with most of its resources and processing power having been depleted over the past decade, leaving very little memory in the system for changes. We have looked at the following two options to accommodate the DBEM transfer to SAFE. However, at this time, we are unable to determine if adequate DATEX system resources will be available.

a. Rewrite DATEX "front-end" (mini-computer) software to allow for the transmission of 132 character records. This option would require extensive software changes. To find an acceptable contractor, and allow time for them to become knowledgeable of the mini computer to rewrite the "front-end" software, would take approximately one year with a rough order of magnitude (ROM), cost of $150,000.

b. Rewrite the software in the main DATEX processor to break the 132 character records into 80 character records for transmission to SAFE. Support for the Analyst File Environment would then have to reblock the 80 character records to 132 character records. This option would take approxi ately six months at a ROM cost of $75,000 for the DATEX portion. [redacted] 25X1

[redacted] 25X1

SECRET [redacted] 25X1

SUBJECT: Data Base Entry Message (DBEM) [redacted] 25X1

3. Additionally, processing the 132 character records would increase the critical processing time required by DATEX to complete the transmission to SAFE, possibly delaying intelligence to SAFE analysis. Therefore, to meet the SAFE dissemination need, we strongly recommend the NERCM format be modified to 80 characters vice 132 characters per block. [redacted] 25X1

4. We do not have the resources to accomplish either of the two above options. We look to your component to identify the necessary funding for changes to DATEX software to meet this requirement. [redacted] 25X1

5. For further information, please contact [redacted] 25X1

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20 May 1985

MEMORANDUM FOR THE RECORD

SUBJECT: NPIC Intel Reports

BACKGROUND

In December 1983, Chief, Communications Management and Liaison Staff, Office of Communications (OC) received a memorandum (NPIC/DPG/EXSD-106-83) from the National Photographic Interpretation Center (NPIC). Briefly, the NPIC memorandum projected a requirement for the Data Transmission Exchange (DATEX) system to support data base updates between NPIC and the Defense Intelligence Agency (DIA)-Advanced Imagery Requirements and Exploitation System (AIRES), with emphasis to expand this support to the National Security Agency (NSA) and the Central Intelligence Agency (CIA)/System for the Analyst File Environment (SAFE). Additionally, the memorandum requested an assessment of the impact projected traffic increases would have on the DATEX system (approximately 10K - 13K additional transmissions to DATEX daily). An Engineering Division (ED) memo (OCE-M84-075, dated 22 March 1984) to NPIC stated that the projected traffic increases would completely saturate the NPIC/DATEX link, and went into detail describing the adverse effects the increase would have on DATEX. In conclusion, the response stated that an alternative solution would be to off-load some of the DATEX work load to other OC systems with an estimated cost of $1,500,000.

Until recently, we were under the impression that the above requirement was closed. However, it was discovered by the Committee on Imagery Requirements (COMIREX) and SAFE, that CIA/SAFE would not be receiving NPIC generated intelligence reports (Data Base Entry Messages (DBEM)), when the Improved NPIC System (INS) is scheduled to come on-line 15 October 1985. The DBEM's are a new report, replacing two reports now generated by NPIC, and were the basis for the additional traffic increase destined for DATEX. CIA/SAFE has always had a requirement to receive the NPIC reports and even though the format and name has changed, SAFE's requirement for these reports continue to exist.

It is quite apparent that something has fallen thru the "Cracks" with the above discovery by COMIREX and SAFE. Since the above has been brought to our attention, the following has transpired which could possibly have an adverse effect on DATEX:

1. Members of the Engineering Division (ED), Datacommunications Section (DATEX), NPIC, COMIREX and SAFE attended a meeting, hosted by the Analytical Support Group (ASG) under the Director for Intelligence (DI) on 13 March 1985. The topic of discussions resurfaced the old

requirement from NPIC (explained above) for DATEX to support additional transmissions, when the INS is scheduled to come on-line in October 1985. Should this requirement be a reality, and with the numbers provided by NPIC, it would mean approximately 10 - 13,000 additional transmissions daily to DATEX. After discussions, all attendees agreed that the projected increases were probably high and NPIC would analyze the figures and present them in another meeting on 27 March 1985.

2. A second meeting, hosted by ASG, was held on 27 March to discuss NPIC's additional transmissions to DATEX. It was determined that NPIC's October 1985 projected increase in traffic would be very modest at best. An increase in data is projected to start in late 1986 and continue to rise through 1989. NPIC indicated that the projected 10-13,000 increase in traffic volume was probably a worst case NPIC system design. One other major problem surfaced during discussions. NPIC may not have initially designed their new system to send intel reports to the world (SAFE, etc.) as is done today. The only users that were to receive the intel reports were DIA and NSA. Further discussions were scheduled regarding the two problems.

3. On 17 April, the undersigned were invited to attend National Base of Imagery-Derived Information (NBIDI) DBEM Technical Exchange Meeting (TEM), hosted by COMIREX. Other attendees included the Office of Information and Technology (OIT), CIA/SAFE, NPIC, DIA and NSA. The purpose of the meeting was to define the method of DBEM transfer from NPIC to DIA, CIA, and NSA after 15 October 1985. DATEX acknowledged that the DATEX system could probably switch the messages if NPIC's new estimated figures were accurate. With the new projections, DATEX would probably not be handling any more than is handled today. DATEX requested NPIC to provide a memorandum stating accurate figures for the traffic volume, before committing the DATEX switch as the interface for the DBEM transfers.

4. A second meeting, hosted by COMIREX was held on on 2 May. In attendance were the same members of the 17 April TEM. The main purpose of the meeting was to review a Request for Change (RFC) that was requested at the TEM on 17 April. This RFC would indicate DATEX as the interface for DBEM transfers. NPIC did provide in writing to DATEX and COMIREX realisticly projected increases in traffic volumes, which DATEX could handle (little or no increase). After it was agreed that DATEX would become the interface for the DBEM transfers, another major problem arose. The DBEM record size (one line of text) would be 132 characters vice the 80 character size of today. DATEX can handle the 132 character DBEM's from NPIC, but cannot transmit them to SAFE. In DATEX's present configuration, the protocol used between DATEX and SAFE will only allow for the record size of 80 characters. To change DATEX would result in extensive changes in the DATEX software used between DATEX and SAFE. The DATEX software changes would require many man hours to accomplish, if it can be done. Additionally, changes would probably have to be made in the Message Processing System (MPS) software and SAFE software. Additional meetings are scheduled to determine the impact of all involved. NPIC stated the 132 character record format was definite until September 1986, and they would not entertain a RFC until after the Initial Operating Capability (IOC) date of the INS.

5. We would like to point out that DATEX is the interface for the NPIC intel reports in todays structure. Some of these reports are transmitted by DATEX to NSA, DIA, CIA/SAFE and to the Department of Defense (DOD) users via the AUTODIN network (approximately 75 users). After the exchange of memos by NPIC and OC, it is quite apparent some requirements would not be satisfied unless DATEX remains the interface. Additionally, the NPIC intel reports are sent to the [redacted] (MPS-03), and to our knowledge they are not aware of the impact these changes will cause. In any configuration, these reports will have to come thru DATEX to get to CIA/SAFE, [redacted] and DOD. 25X1 25X1

6. We feel OC has been completely honest with NPIC and all concerned regarding the above described problems, and they are not a DATEX problem per se. The options at this point appear to be:

(1). DATEX personnel could modify the DATEX software to accommodate the new character size of 132. This option will impact and possible delay the test schedule of the new systems (SAFE delivery 2, NPIC INS, Message Handling Facility (MHF) and NPIC teletype) planning to test with DATEX this summer. Even if this option is selected, it is possible DATEX will not have either the necessary software resources or be able to complete the changes by October 15.

(2). OIT could insist upon a change in the NPIC INS to unblock the data in the character size of 80.

7. Should OIT/DATEX be tasked to make changes, we believe DATEX cannot be held responsible for any slippage in the IOC date for the INS.

25X1

[redacted]

C/DCS/TB/HFD/DNG/OIT

25X1

[redacted]

DC/DCS/TB/HFD/DNG/OIT

Distrubition:

C/DNG/OIT
C/HFD/OIT
DC/HFG/OIT
C/TB/HFD/OIT
C/SSB/HFD/OIT
CMX/SID/SI
ISG/OIT (SAFE)
DPG/NPIC